

### REMARKS

The present application relates to inbred maize plant and seed PH4GP. Claims 1-30 are pending in the present application. Claims 7, 9 and 22 have been amended. Claim 30 has been cancelled. No new matter has been added by way of amendment. Applicant respectfully requests consideration of the claims in view of the following remarks.

#### Detailed Action

Applicant acknowledges that the Office Action of August 11, 2005 has been vacated in favor of the Office Action of October 14, 2005.

Applicant further acknowledges that the Terminal Disclaimer of May 23, 2005 has obviated the double patenting rejection of record.

Applicant acknowledges that the Applicant's remarks of May 23, 2005 have overcome the rejections of claims 7-10 under 35 U.S.C. § 112, first paragraph, regarding the presence of a single cell from an inbred parent.

#### Rejections Under 35 U.S.C. § 112, First Paragraph

##### *A. Written description regarding Claims 22 and 30*

Claims 22 and 30 stand rejected under 35 U.S.C. § 112, first paragraph as failing to comply with the written description requirement. The claim(s) contains subject matter, which was not described in the specification in such a way as reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The Examiner states that the "claims are drawn to nematode-resistant corn plants, and to methods for making doubled haploid maize plants. However, no basis has been pointed out for this language". See Office Action, p. 3.

Although not acceding to the Examiner's rejection, in an effort to reduce the issues upon appeal, Applicant has now amended claim 22 to delete the language "nematode" and canceled claim 30, thereby alleviating this rejection.

##### *B. Enablement regarding Claims 1-10*

Claims 1-10 remain and claims 13-16 and 19-30 are rejected under 35 U.S.C. § 112, first paragraph, as failing to comply with the enablement requirement.

The Examiner newly cites Murray *et al.* to reject claims 19-30. The Examiner states that "linkage drag is common phenomenon in corn breeding, and the equivalent of 10 backcrosses resulted in the retention of 10% of the unwanted donor parent genome, in contrast to the predicted less than 1% (see, e.g., pages 82-84)." See Office Action, p. 4.

Applicant respectfully traverses. Murray *et al.* teaches that the very issue of linkage drag cited by the Examiner can be greatly circumvented with the use of molecular markers. Murray *et al.* states: "[t]he longstanding concept of using markers flanking a desirable gene to circumvent these problems (Bartlett and Haldane, 1935) is now practical with RFLP markers. Individuals in which recombination has occurred optimally close to the desired locus can be identified and thus linkage drag can be greatly reduced." See Murray *et al.*, p. 84.

The specification provides a description of how to backcross traits into PH4GP (Specification, p. 21, ll. 16-34) and it is understood by those of skill in the art that backcross conversions are routinely produced and do not represent a substantial change to a variety. The World Seed Organization, on its web site, writes, "[t]he concept of an essentially derived variety was introduced into the 1991 Act of the UPOV Convention in order to avoid plagiarism through mutation, multiple back-crossing and to fill the gap between Plant Breeder's Rights and patents." ASSINSEL, an International breeders association, has published a position paper that refers to a conversion produced by repeated backcrossing of parental lines of hybrid varieties as a "cosmetic modification". As determined by the UPOV Convention, "essentially derived varieties may be obtained for example by the selection of a natural or induced mutant, or of a somaclonal variant, the selection of a variant individual from plants of the initial variety, backcrossing, or transformation by genetic engineering" (emphasis added). A copy of the relevant portion of the UPOV Convention and the World Seed Organization web site was attached to an amendment filed March 11, 2003 in the parent case, U.S. Serial No. 09/758,713, now U.S. Patent No. 6,720,487. Thus, it is clear that there is worldwide agreement that by obtaining the seed of a newly developed variety such as PH4GP, and by using such seed for repeated backcrossing in accordance with claims 19-30, one is producing only a cosmetic modification and plagiarizing the work of the inbred inventor.

The ability of one of ordinary skill in the art to effectively use backcrossing to introgress a single locus conversion is also clearly supported by the scientific literature. For example, see Ragot, M. *et al.* (1995) Marker-assisted backcrossing: a practical example, in *Techniques et*

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*Utilisations des Marqueurs Moleculaires (Les Colloques, Vol. 72, pp. 45-56 (attached as Appendix 1), and Openshaw et al., (1994) Marker-assisted Selection in Backcross Breeding, Analysis of Molecular Marker Data, pp. 41-43 (attached as Appendix 2). Specifically, Ragot et al., which makes note of the earlier work of Murray et al., demonstrates that "spectacular" progress toward the recurrent parent genotype was obtained with 61 RFLP markers. Ragot et al. concludes that "recovery of the recurrent parent genotype could proceed even faster than in the experiment described herein, should the appropriate protocol and resources (population size, number and position of markers) be allocated."*

Furthermore, the specification teaches multiple ways of introgressing or transforming a maize plant with various genes which encode specific protein products which confer advantageous traits desired in the plant. (See generally, specification, p. 23-35). This includes the use of markers to aid in the identification, selection and transformation of the maize plant with the desired gene.

Accordingly, Applicant submits that claims 1-10, 13-16, and 19-30 are fully enabled and have fully satisfied the legal standards for enablement. Applicant respectfully requests reconsideration and withdrawal of the enablement rejections under 35 U.S.C. § 112, first paragraph.

### **Conclusion**

In conclusion, Applicant submits in light of the above amendments and remarks, the claims as amended are in better condition for appeal. If it is felt that it would aid in prosecution, the Examiner is invited to contact the undersigned at the number indicated to discuss any outstanding issues.

No other fees or extensions of time are believed to be due in connection with this amendment; however, consider this a request for any extension inadvertently omitted, and charge

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any additional fees to Deposit Account No. 26-0084.

Respectfully submitted,



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